

### **REMARKS**

The foregoing amendment amends claims 1, 2, 5 and 7, cancels claims 4 and 6, and adds new claims 8-12. Now pending in the application are claims 1-3, 5, 7-12 of which claim 1 is independent. The following remarks address all stated grounds for rejection and place the presently pending claims in condition for allowance.

#### **Claim Amendments**

Applicants amend claims 1, 2, 5 and 7 to clarify the scope of the claimed invention. In particular, claim 1 is amended to incorporate the limitations recited in claims 4 and 6. Claims 4 and 6 are subsequently canceled. Claims 5 and 7 are amended to depend from claim 1. No new matter is added.

#### **Claim Rejections Under 35 U.S.C. §103 As Being Unpatentable**

Claims 1-3 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,378,637 (“Ono”) in view of U. S. Patent Application Publication No. 2003/0027026 (“Bruck”), and further in view of U.S. Patent No. 6,220,383 (“Muraki”). Applicants respectfully traverse the rejection for the following reasons.

Claim 1 is directed to a fuel cell powered electric vehicle including a fuel cell and an electricity storing device for storing electricity generated by the fuel cell. The vehicle also includes *a common box* for storing the fuel cell and the electricity storing device under the floor of a cabin. The common box includes *a plate* for separating the fuel cell from the electricity storing device in the common box. Since the fuel cell and the electricity storing device are stored together in the common box using the plate, the length of the high voltage wiring can be shortened, thereby reducing the electric power loss of the vehicle.

With the arrangement of the claimed invention, the fuel cell and the electricity storing device can be united together to form a unitary body, whereby the service and maintenance of the system and the apparatus can be implemented effectively. By uniting the fuel cell and the electricity storing device together to form a unitary body, the rigidity of the common box can be

increased, thereby making it possible to protect the fuel cell and the electricity storing device against damage resulting from external force in the claimed invention.

Furthermore, since the fuel cell and the electricity storing device are installed under the floor of the cabin, the fuel cell and the electricity storing device are shielded from direct sunlight. This reduces or eliminates unwanted heating of the fuel cell due to strong sunlight.

In the claimed invention, a through hole connecting the electricity storing device and the cabin is provided on the common box, and the electricity storing device is cooled by air which passes through the through hole. Since the through holes are provided below the rear seat in the cabin, the space of the cabin can be utilized effectively, and air discharged from the fan is prevented from being applied directly to passengers.

The claimed invention controls *the electricity storing device at a temperature which is different from the temperature of the fuel cell*. In the claimed invention, the fuel cell and the electricity storing device do not interfere with each other in the common box when the fuel cell and the electricity storing device are controlled at different temperatures. Since the plate is employed to separate the fuel cell from the electricity storing device in the interior of the common box, the fuel cell and the electricity storing device can be cooled using separate cooling lines.

Applicants respectfully submit that Ono, Bruck and Muraki fail to teach all of the limitations of claim 1.

Ono teaches a fuel cell powered electric automobile having a fuel cell (3) and electrical energy storage (7) disposed under the cabin of the automobile. In Ono, the fuel cell (3) and the electrical energy storage (7) are separately disposed under the cabin. Ono does not teach a common box for storing the fuel cell (3) and the electrical energy storage (7). The Examiner recognizes in the Office Action that Ono does not teach that a common box for storing the fuel cell and the electricity storing device is disposed under the floor of a cabin, as recited in claim 1. The Examiner cites Bruck to compensate for the deficiencies of the Ono reference. Bruck, however, does not teach one or more limitations of the claimed invention.

Bruck teaches a fuel cell installed for use as the drive unit of a vehicle. Bruck teaches that a fuel cell unit (10) is installed under the cabin of the vehicle to supply driving power for the vehicle. Bruck also teaches that the fuel cell unit (10) is encased by insulation (11). Bruck, however, also does not teach *a common box* for storing the fuel cell and the electricity storing device, as recited in claim 1. Furthermore, Bruck does not teach that both the fuel cell and the electricity storing device are insulated from each other so that the electricity storing device is controlled at a temperature which is different from the temperature of the fuel cell, as recited in claim 1.

The Examiner also recognizes in the Office Action that Ono does not teach that a through hole connecting the electricity storing device and the cabin is provided on the common box. The Examiner cites Muraki to provide teachings for this limitation. Muraki teaches an electric power unit including a secondary battery (2), a cooling fan (3), a fan motor (5) and a case (6). Muraki, however, does not teach *a common box* for storing the fuel cell and the electricity storing device under the *floor* of a cabin, as recited in claim 1. Furthermore, Muraki does not teach that the fuel cell and the electricity storing device are controlled at different temperature, as recited in claim 1.

In light of the foregoing claim amendments and arguments, Applicants submit that Ono, Bruck and Muraki fail to teach all of the limitations of claim 1. Claims 2 and 3, which depend upon claim 1, are not rendered obvious over the cited prior art references. Applicants therefore request the Examiner to reconsider and withdraw the rejection of claims 1-3 under 35 U.S.C. §103(a), and pass the claims to allowance.

#### Claim Rejections Under 35 U.S.C. § 103 As Being Unpatentable

Claims 4-5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ono in view of Bruck and Muraki, and further in view of U.S. Patent No. 5,490,572 ("Tajiri"). Applicants respectfully traverse the rejection for the following reasons.

In the foregoing claim amendments, claim 4 is canceled and claim 5 is amended to depend upon claim 1.

Applicants respectfully submit that Ono, Bruck, Muraki and Tajiri fail to teach all of the limitations of claim 1.

The Tajiri reference is cited by the Examiner to provide teachings for the limitations added in dependent claims 4-5. Tajiri teaches an electric automobile powered by batteries charged by a charger (C). Tajiri teaches a system for controlling the temperature of the batteries. Tajiri, however, does not teach a common box for storing the fuel cell and the electricity storing device, as recited in claim 1. Furthermore, Tajiri does not teach that the fuel cell and the electricity storing device are controlled at different temperature, as recited in claim 1.

In light of the foregoing claim amendments and arguments, Applicants submit that Ono, Bruck, Muraki and Tajiri fail to teach all of the limitations of claim 1. Claim 5, which depends upon claim 1, is not rendered obvious over the cited prior art references. Applicants therefore request the Examiner to reconsider and withdraw the rejection of claims 4-5 under 35 U.S.C. §103(a), and pass the claim to allowance.

Claim Rejections Under 35 U.S.C. § 103 As Being Unpatentable

Claims 6-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ono in view of Bruck and Muraki, and further in view of U.S. Patent No. 5,332,630 ("Hsu"). Applicants respectfully traverse the rejection for the following reasons.

In the foregoing claim amendments, claim 6 is canceled and claim 7 is amended to depend upon claim 1.

Applicants respectfully submit that Ono, Bruck, Muraki and Hsu fail to teach all of the limitations of claim 1.

The Hsu reference is cited by the Examiner to provide teachings for the limitations added in dependent claims 6-7. Hsu teaches an on-board recharging system for battery powered electric vehicles including a rechargeable battery connected to the motor for driving the motor, and a fuel cell assembly connected to the battery for recharging the battery. Hsu, however, does not teach that the rechargeable battery and the fuel cell are stored in a single *common box* disposed under the floor of a cabin, as recited in claim 1. Furthermore, Hsu does not teach that

the fuel cell and the electricity storing device are controlled at different temperature, as recited in claim 1.

In light of the foregoing claim amendments and arguments, Applicants submit that Ono, Bruck, Muraki and Hsu fail to teach all of the limitations of claim 1. Claim 7, which depends upon claim 1, is not rendered obvious over the cited prior art references. Applicants therefore request the Examiner to reconsider and withdraw the rejection of claims 6-7 under 35 U.S.C. §103(a), and pass the claims to allowance.

#### New Claims

Applicants add new claims 8-12 to clarify the scope of the claimed invention. Claims 8-12 depend upon claim 1, and add separate and patentable limitations to claim 1. For example claim 8 adds the limitation that the refrigerant inlet and outlet ports are disposed on the lower side of the seat in the vehicle. Support for the new claims can be found in the figures and corresponding descriptions in the specification of the pending application. No new matter is introduced. In light of the foregoing claim amendments and arguments, Applicants submit that new claims 8-12, which depends upon claim 1, are not rendered obvious over the cited prior art references. Applicants therefore request the Examiner to pass the claims to allowance.

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Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this statement. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. NGW-006 from which the undersigned is authorized to draw.

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Respectfully submitted,

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